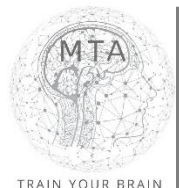
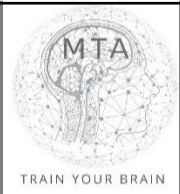
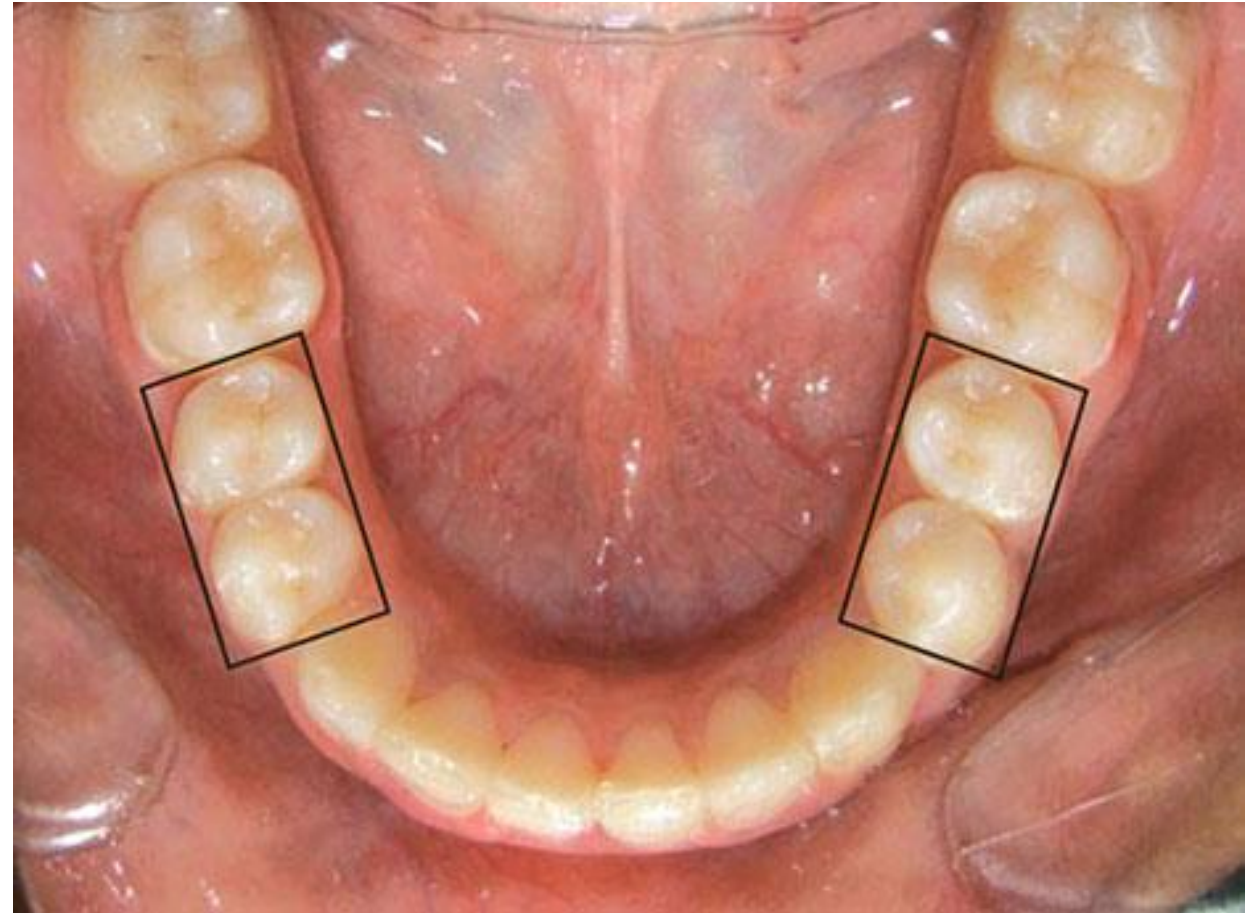
# Dental Anatomy lec 9

# Permanent Mandibular Premolars

| Lecture | Dates | Subject |
|---|---|---|
| *Lec. 1* | | Introduction |
| *Lec, 2* | | Numbering systems, crown & roots and tooth surfaces |
| *Lec. 3* | | Anatomical Landmarks |
| *Lec. 4* | | Permanent Incisors (Permanent Maxillary Central Incisor) |
| *Lec. 5* | | Maxillary Lateral Incisor |
| *Lec. 6* | | Mandibular Incisors |
| *Lec. 7* | | Permanent Canines |
| *Lec. 8* | | Permanent Maxillary Premolars |
| *Lec. 9* | → | **Permanent Mandibular Premolars** |
| *Lec 10* | | Permanent Maxillary Molars (Maxillary First Molar) |

# Mandibular First Premolar

**It is the smallest premolar in the human dentition.**

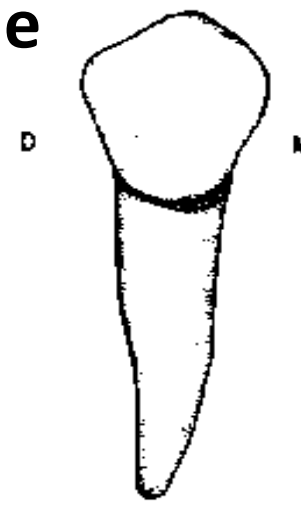
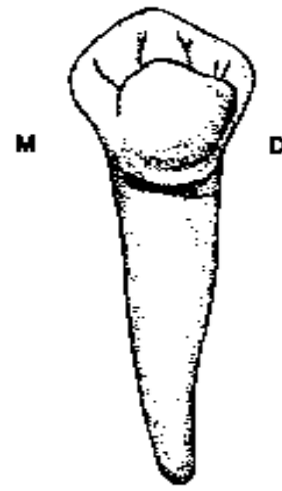
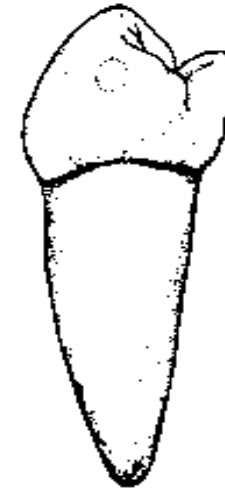
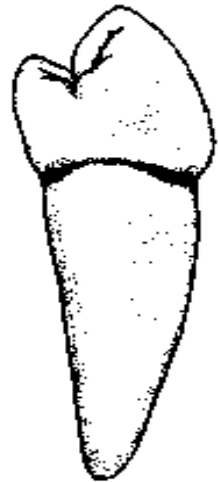
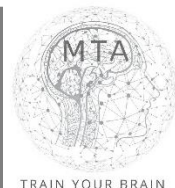
**It resembles both the mandibular canine and the mandibular second premolar in function and has some of the characteristics of each of them.**

## A. Characteristics that resemble those of the <u>mandibular canine</u>:

1) The buccal cusp is long, sharp, and is the only occluding cusp.

2) The bucco-lingual measurement is similar to that of the mandibular canine.

3) The occlusal surface slopes sharply lingually in a cervical direction.

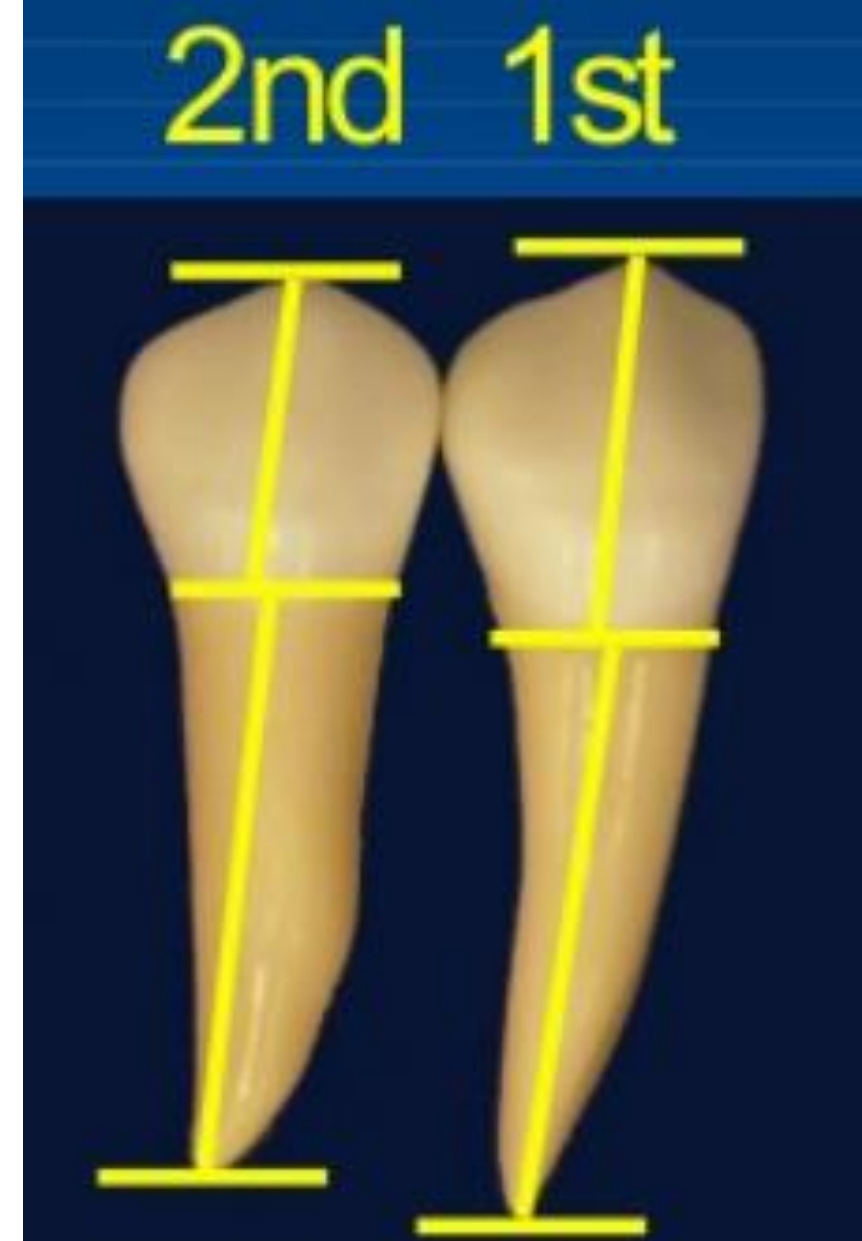
4) The mesio-buccal cusp ridge is shorter than the disto-buccal cusp ridge.

5) The outline form from the occlusal aspect resembles the incisal aspect of the mandibular canine.

## B. Characteristics that resemble those of the mandibular second premolar:

1) The mesial and distal contact areas are located at nearly the same level.

2) The curvature of the cervical line mesially and distally is similar.

3) The tooth has more than one cusp.

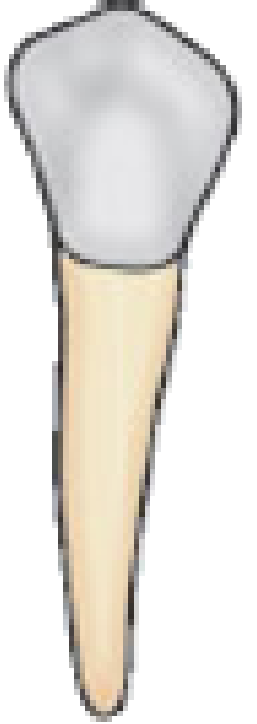
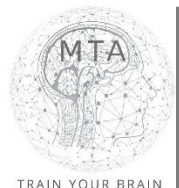
4) The length of the root of the mandibular first premolar is closer to the length of the root of the mandibular second premolar.

# Mandibular First Premolar

## Principal identifying features:

1) Marked lingual inclination of the crown.

2) **Two cusps:** buccal and lingual; the buccal cusp is larger, and the lingual cusp is like a more developed cingulum.

3) Circular occlusal outline.

4) Single rounded root.

# Mandibular First Premolar

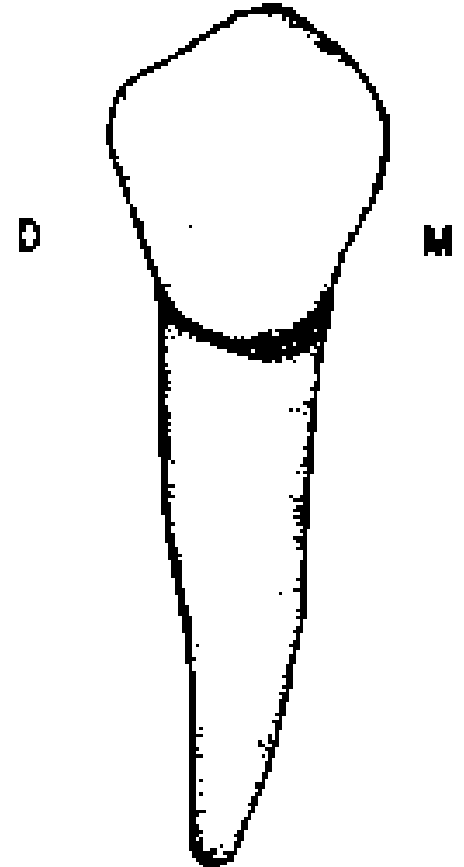
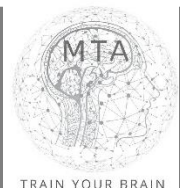
## - Buccal Aspect

1) The crown is roughly **trapezoidal** with a prominent middle **buccal ridge**, which continues from the cusp tip to the cervical line.

2) The mesial slope of the buccal cusp is shorter than the distal slop.

3) The **contact areas** mesially and distally are broad and at the same level.

4) The **mesial and distal outlines** from the cervical line to the crest of curvature are slightly concave.

5) The **tip of the buccal cusp** is sharp and located mesial to the long axis of the crown.

# Mandibular First Premolar

## *- The Mesial Aspect*

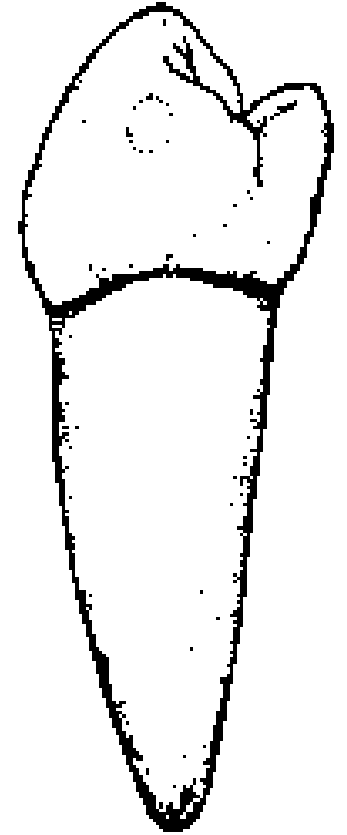
1) The tip of the buccal cusp nearly reaches the center of the root, and the convexity of the lingual outline of the cusp will be lingual to the lingual outline of the root.

2) The buccal outline is very curved, and the crest of curvature is near the middle third of the crown.

3) The lingual outline is less curved than the buccal outline, with the crest of curvature at the center of the middle third.

## - The Mesial Aspect

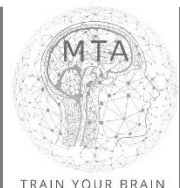
**4) The height of the lingual cusp is two-thirds the height of the buccal cusp from the cervical line to the tip of the cusp.**

**5) The surface of the crown mesially is smooth except for the presence of the mesio-lingual developmental groove.**

## - *The Distal Aspect*

**The distal aspect of the mandibular first premolar differs from the mesial aspect in the following points:**

**1) There is no developmental groove in the distal aspect.**

**2) The distal marginal ridge is higher than the mesial marginal ridge, with less inclination lingually.**

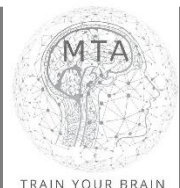
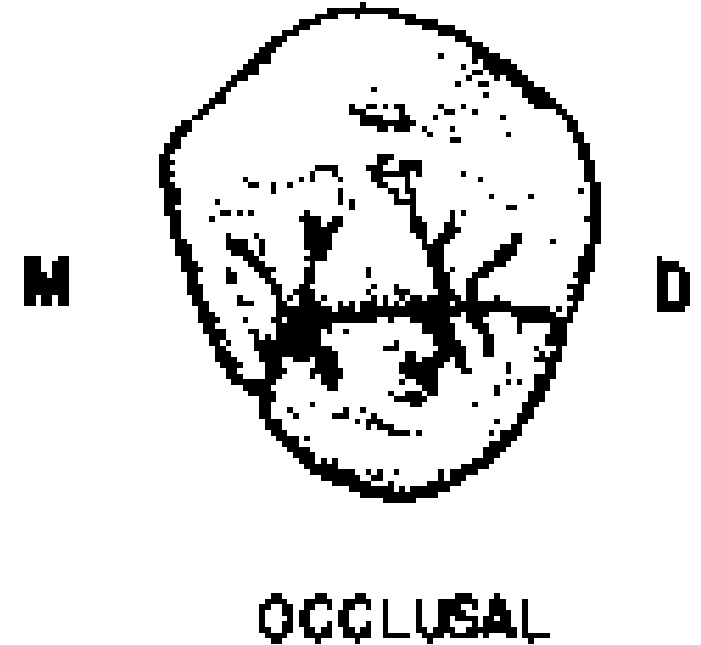
**3) The curvature of the cervical line distally is less.**

# Mandibular First Premolar

## *- The Occlusal Aspect*

1) The buccal ridge is prominent.

2) The mesio-buccal and disto-buccal line angles are rounded and prominent.

3) The crown curves sharply to the center of the lingual surface.

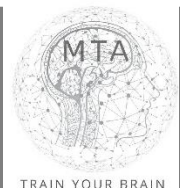
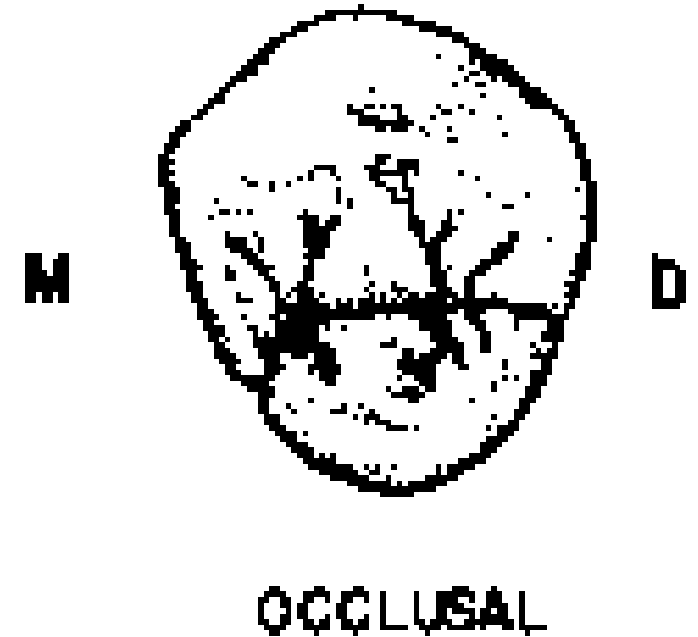
4) The marginal ridges are well developed.

# Mandibular First Premolar

## - The Occlusal Aspect

5) The lingual cusp is small.

6) The triangular ridge of the buccal cusp is large, while the triangular ridge of the lingual cusp is small.

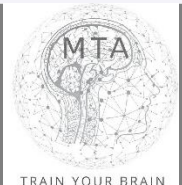
7) There are two fossae: mesial and distal fossae.

8) The mesial contact area is smaller than the distal contact area because it is constricted by the mesio-lingual developmental groove.

# Quiz !!

السؤال 15
1 نقاط

التالي | سابق

.The buccal cusp of mandibular first premolar is long, sharp, and is the only occluding cusp

- (●) صح
- ( ) خطأ

# Quiz !!

التالي | سابق

السؤال 42
1 نقاط

The curvature of cervical line of maxillary first premolar is more distally than mesially

- ○ صح
- ◉ خطأ